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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,716	02/11/2004	Alina Deutsch	YOR920040041US1 (163-30)	2827
24336	7590	06/14/2005	EXAMINER SUN, XIUQIN	
KEUSEY, TUTUNJIAN & BITETTO, P.C. 14 VANDERVENTER AVENUE, SUITE 128 PORT WASHINGTON, NY 11050			ART UNIT 2863	
PAPER NUMBER				
2863				
DATE MAILED: 06/14/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

**Office Action Summary**

Application No.

10/776,716

Applicant(s)

DEUTSCH ET AL.

Examiner

Xiuqin Sun

Art Unit

2863

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-22 is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-15 and 19 is/are rejected.
- 7) ☒ Claim(s) 7-9 and 16-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>02/11/2004</u>  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed on 02/11/2004 has been received. However, the reference "ALBERT E. RUEHLI AND THOMAS A. JOHNSON; Circuit Analysis Computing of Semiconductor Packages and systems; Wiley Encyclopedia and Electrical and Electronics Engineering, Vol. 3; Pages 33-354" has not been considered by the examiner because it does not contain sufficient information. Specifically, it is short of a date which is required by MPEP 609.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Coleman (U.S. Pat. No. 5625328).

Coleman teaches a method for analyzing a circuit with transmission lines, comprising the steps of: based on coupling factors, determining which sources influence each of a plurality of transmission lines (col. 3, lines 52-60); computing transmission line

parameters based on the sources which influence each transmission line (col. 3, lines 61-67); analyzing a transient or frequency response for each transmission line by segmenting each line to perform an analysis on that line (col. 5, lines 60-67 and col. 6, lines 1-8); and repeating the step of analyzing using waveforms determined in a previous iteration until convergence to a resultant waveform has occurred (col. 6, lines 9-64).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coleman (U.S. Pat. No. 5274434) in view of Thornton (U.S. Pat. No. 6392503).

Coleman teaches a method that includes the subject matter discussed above. Coleman does not mention explicitly: calculating coupling factors for each transmission line based on neighboring sources.

Thornton discloses a directional coupler, and teaches: determining coupling factors for a plurality of transmission lines (col. 1, lines 19-30; cols. 1-2, lines 65-16 and col. 3, lines 33-40).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Thornton in the invention of Coleman in order to fabricate and evaluate a circuit with transmission lines when coupling factors are not given (Thornton, col. 2, lines 48-53).

6. Claims 3, 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coleman (U.S. Pat. No. 5274434) in view of Bechhoefer (U.S. Pub. No. 20040230387).

Coleman teaches a method that includes the subject matter discussed above. Coleman does not mention explicitly: regarding claim 3, step of modeling the transmission lines in terms of voltage and/or current sources; regarding claim 5, the step of modeling includes employing method of characteristics models; regarding claim 10, a program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for analyzing a circuit with transmission lines, as recited in claim 1.

Bechhoefer teaches a method for analysis of a circuit with transmission lines, including: modeling the transmission lines in terms of voltage and/or current sources employing method of characteristics models (sections 0014, 0110 and 0111); a program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for analyzing said circuit (sections 0008-0010).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Bechhoefer in the invention of Coleman

in order to computerize the implementation of the method for digitally analyzing and simulating a circuit with transmission lines utilizing modeling techniques (Bechhoefer, sections 0010 and 0097).

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coleman (U.S. Pat. No. 5274434) in view of Bechhoefer, as applied to claims 1 and 3 above, and further in view of Hester (U.S. Pub. No. 20040041624).

Coleman and Bechhoefer teach a method that includes the subject matter discussed above. Coleman and Bechhoefer do not mention explicitly: modeling includes employing lumped models.

Hester teaches a technique of modeling a circuit with transmission lines employing lumped models (section 0024)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Hester in the invention of Coleman and Bechhoefer in order to make the circuit suitable for use with a communication medium comprising capacitively coupled non-ideal transformers and transmission lines (Hester, Abstract).

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coleman (U.S. Pat. No. 5274434) in view of Girgis et al. (U.S. Pat. No. 4812995).

Coleman teaches a method that includes the subject matter discussed above. Coleman does not mention explicitly: performing an analysis of the transmission lines based on an electronic form of an electrical circuit.

Girgis et al. teach a technique of performing an analysis of the transmission lines based on an electronic form of an electrical circuit (col. 17, lines 37-66).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Girgis et al. in the invention of Coleman in order to provide a more robust and efficient technique to analyze transmission lines digitally (Girgis et al., col. 1, lines 28-40).

9. Claims 11, 12, 14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coleman in view of Thornton (U.S. Pat. No. 6392503) and Bechhoefer (U.S. Pub. No. 20040230387).

With respect to claim 11:

Coleman teaches a method for analyzing a circuit with transmission lines, comprising the steps of: based on coupling factors, eliminating sources which influence a transmission line less than a threshold amount (col. 3, lines 52-60); computing transmission line parameters based on the sources which influence each transmission line (col. 3, lines 61-67); analyzing a transient response for each model of a transmission line by segmenting each line to perform an analysis on that line (col. 5, lines 60-67 and col. 6, lines 1-8); and repeating the step of analyzing using waveforms determined in a previous iteration until convergence to a resultant waveform has occurred (col. 6, lines 9-64).

Coleman does not mention expressly: determining coupling factors for a plurality of transmission lines; and representing each line as a coupling model to describe the line.

Thornton discloses a directional coupler, and teaches: determining coupling factors for a plurality of transmission lines (col. 1, lines 19-30; cols. 1-2, lines 65-16 and col. 3, lines 33-40).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Thornton in the invention of Coleman in order to fabricate and evaluate a circuit with transmission lines when coupling factors are not given (Thornton, col. 2, lines 48-53).

Bechhoefer teaches a method for analysis of a circuit with transmission lines, comprising: representing each transmission line as a coupling model to describe the line (sections 0014, 0110 and 0111).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Bechhoefer in the invention of Coleman in order to digitally analyze and simulate a circuit with transmission lines utilizing modeling techniques (Bechhoefer, sections 0010 and 0097).

With respect to claims 12, 14 and 19:

Coleman and Thornton teach a method that includes the subject matter discussed above. The combination of Coleman and Thornton does not mention explicitly: regarding claim 12, step of modeling the transmission lines in terms of voltage and/or current sources; regarding claim 14, the step of modeling includes employing method of characteristics models; regarding claim 19, a program storage device readable by machine, tangibly embodying a program of instructions executable by the



machine to perform method steps for analyzing a circuit with transmission lines, as recited in claim 1.

Bechhoefer teaches a method for analysis of a circuit with transmission lines, including: modeling the transmission lines in terms of voltage and/or current sources employing method of characteristics models (sections 0014, 0110 and 0111); a program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps for analyzing said circuit (sections 0008-0010).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Bechhoefer in the combination of Coleman and Thornton in order to computerize the implementation of the method for digitally analyzing and simulating a circuit with transmission lines utilizing modeling techniques (Bechhoefer, sections 0010 and 0097).

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coleman in view of Thornton (U.S. Pat. No. 6392503) and Bechhoefer (U.S. Pub. No. 20040230387), as applied to claim 12 above, and further in view of Hester (U.S. Pub. No. 20040041624).

The combination of Coleman, Thornton and Bechhoefer teaches a method that includes the subject matter discussed above. The combination of Coleman, Thornton and Bechhoefer does not mention explicitly: modeling includes employing lumped models.

Hester teaches a technique of modeling a circuit with transmission lines employing lumped models (section 0024)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Hester in the combination of Coleman, Thornton and Bechhoefer in order to make the circuit suitable for use with a communication medium comprising capacitively coupled non-ideal transformers and transmission lines (Hester, Abstract).

11. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coleman in view of Thornton (U.S. Pat. No. 6392503) and Bechhoefer (U.S. Pub. No. 20040230387), as applied to claim 11 above, and further in view of Girgis et al. (U.S. Pat. No. 4812995).

The combination of Coleman, Thornton and Bechhoefer teaches a method that includes the subject matter discussed above. The combination of Coleman, Thornton and Bechhoefer does not mention explicitly: performing an analysis of the transmission lines based on an electronic form of an electrical circuit.

Girgis et al. teach a technique of performing an analysis of the transmission lines based on an electronic form of an electrical circuit (col. 17, lines 37-66).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Girgis et al. in the combination of Coleman, Thornton and Bechhoefer in order to provide a more robust and efficient technique to analyze transmission lines digitally (Girgis et al., col. 1, lines 28-40).

***Allowable Subject Matter***

12. Claims 7-9 and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claims 20-22 are allowed.

***Reasons for Allowance***

14. The following is an examiner's statement of reasons for allowance:

The primary reason for the allowance of claims 7-9 and 16-18 is the inclusion of the claimed method step of: scheduling an order for analyzing the transmission lines. It is this limitation found in each of the claims, as it is claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

The primary reason for the allowance of claims 20-22 is the inclusion of the limitations of: a transmission analysis program that selects or rejects aggressor lines based on a coupling factor value determined relative to one or more victim lines; and a solver that performs a circuit analysis on the circuit model using the victim lines and the selected aggressor lines but not the rejected aggressor lines. It is these limitations found in each of the claims, as they are claimed in the combination that have not been found, taught or suggested by the prior art of record, which make these claims allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Contact Information***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuqin Sun whose telephone number is (571)272-2280. The examiner can normally be reached on 6:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571)272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Xiuqin Sun  
Examiner  
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June 1, 2006



MICHAEL NGHIEM  
PRIMARY EXAMINER

MICHAEL NGHIEM  
PRIMARY EXAMINER